Rinnai

Rinnai | COMMERCIAL HOT WATER SOLUTIONS

Installing a Rinnai hot water system that has been pre-assembled is easy, and with known upfront costs, there are no hidden surprises when quoting. With improved performance, energy efficiency and affordability, our solutions deliver real benefits for the end user, the owner and the installer.

Pre-Assembled Systems

- Confidently specify
- Known dimensions
- Quote easily with minimal contingency allowance
- Quick installation
- Whole system warranty

Total Cost of Ownership

- Lower installation costs
- Lower running costs
- Lower ongoing servicing costs
- Can be serviced without whole system shutdown

Installation Flexibility

- Can be economically expanded to meet changes in demand
- Internal or external siting
- Water heaters can be remote from storage vessels
- Space saving opportunities

System Reliability

- Can be interfaced with building management or other alarm systems to to verify system operation
- Inbuilt redundancy through multiple heating units

Note:

Drawings and images in this catalogue are for illustration purposes only and should not be used as hydraulic design specifications.

All installations should be in accordance with local and national regulations.

Details are subject to change without notice.

Rinnai | APPLICATION SOLUTIONS

Rinnai has made it easy to find a Commercial Hot Water Solution to suit your application. We have developed three main system types that can be scaled to suit your application.

Shower Blocks · Dairy Farms · Café · Small Accom. · Hair Salon · Child Care

1 DEMAND DIRECT
Continuous Flow Hot Water

Continuous use over an extended period.

For example, shower blocks where all showers are regularly run simultaneously.

Medium Accom. · Large Accom.

2 DEMAND DUO
Continuous Flow With Storage Backup

Total water drawn during the day's peak is known but the rate of water use varies.

For example, central hot water systems for hotels, motels and apartment blocks.

Dairy Farms · Comm. Laundrettes · Small Accom. · Medium Accom. · Spa Baths

3 DEMAND RAPID
Rapid Recovery Storage

Applications requiring rapid delivery with recovery time available before next use.

For example, filling a machine or spa bath.

Shower Blocks · Dairy Farms · Large Accom. · Comm. Laundrettes · Café · ALL

S DEMAND SOLAR
Solar Preheat System

Let us show you how to combine our energy efficient commercial solutions with a new or existing solar system from Rinnai or your preferred Solar supplier.

Take advantage of free energy from the sun while ensuring your customers always have hot water when they need it.

Shower Blocks · Large Accom. · Medium Accom. · ALL

R Ring Mains

Circulating Ring Mains give your customers instant hot water instantly available at all outlets.

ALL

i Dimensions and specifications
Internal flueing and quality components

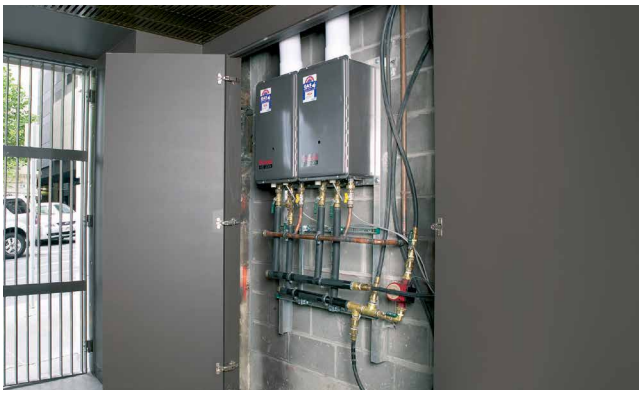
1

Continuous Flow Hot Water

Continuous use over an extended period.

For example, shower blocks where all showers are regularly run simultaneously.

IDEAL FOR: Small Accom. | Shower Blocks | Gyms | Sports Clubs | Camp Grounds | Hair Salon | Café | Child Care | Dairy Farms



DEMAND DIRECT

- **Hot water on demand**
- **Minimise running costs**
- **Powerful and flexible: 45 - 1300 kW in a single system**
- **Temperature control at your fingertips**
- **Reduce installation cost - eliminate tempering valves & mixers**

Single Units

A Rinnai Heavy Duty water heater is the basis for a hot water system that will never run out, providing a constant outlet temperature at all times.

Rinnai Electronic Manifolding Systems

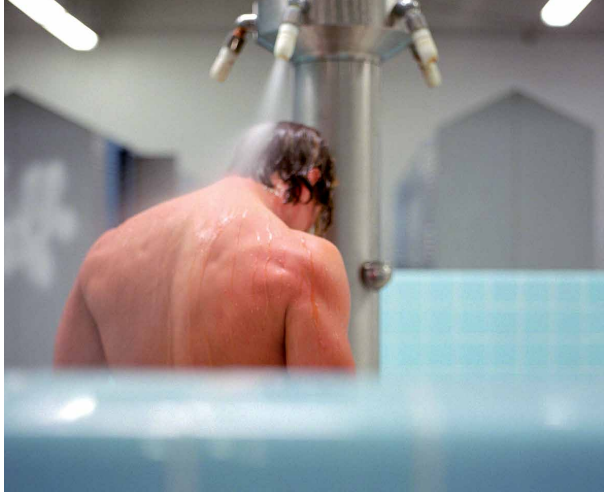
- Electronic Control Connection
- Quick installation
- Units turn off and on to match demand
- Units alternate to have equal running hours and maximise economic life

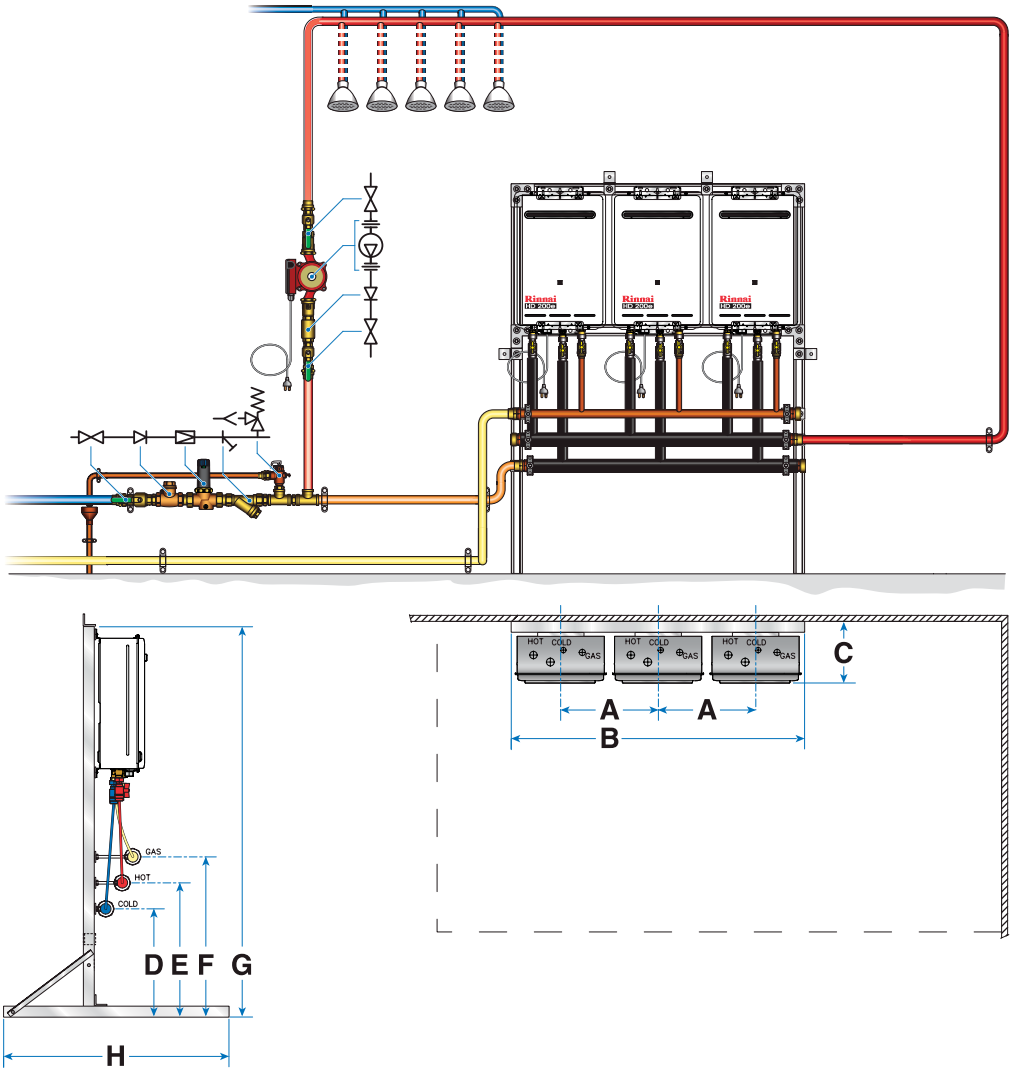
Dual Units - EZ Connect

- Economical way of doubling system output

Larger Systems

- Economical way of increasing system output
- These large systems will load share to ensure equal running hours across all units
- Ideal for extended periods of high peak flow rates





Manifold Pack	A	B	Dry Weight	MJ
MP 2	375	750	60 kg	400
MP 3		1125	90 kg	600
MP 4		1500	120 kg	800
MP 5		1875	150 kg	1000
MP 6		2250	180 kg	1200

HD Model	C	D	E	F	G	H
HD200 e	245	410	510	610	1500	850
HD200 i	280	340	440	540		

2

Continuous Flow With Storage Backup

Total water drawn during the day's peak is known but the rate of water use varies.

For example, central hot water systems for hotels, motels and apartment blocks.

IDEAL FOR:

Medium Accom.

Large Accom.

DEMAND DUO

Combines the benefits of continuous flow and storage systems. High output and minimal storage losses without limiting peak flow rate.

Hot water demand for accommodation is at a maximum for periods of one or two hours each day.

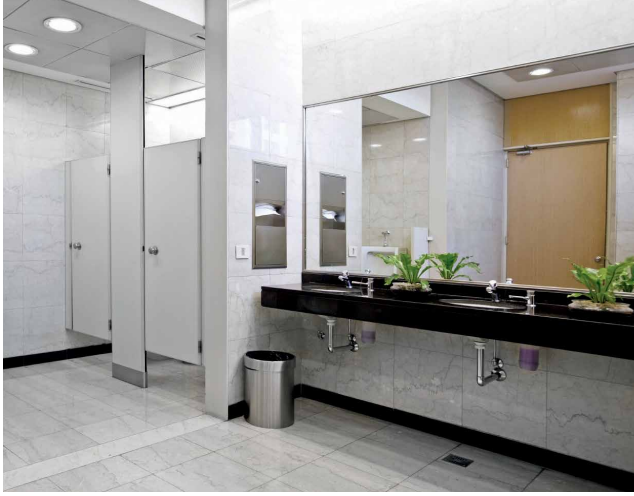
The Rinnai Infinity Heavy Duty continuous flow water heaters can supply the base load during the peak times.

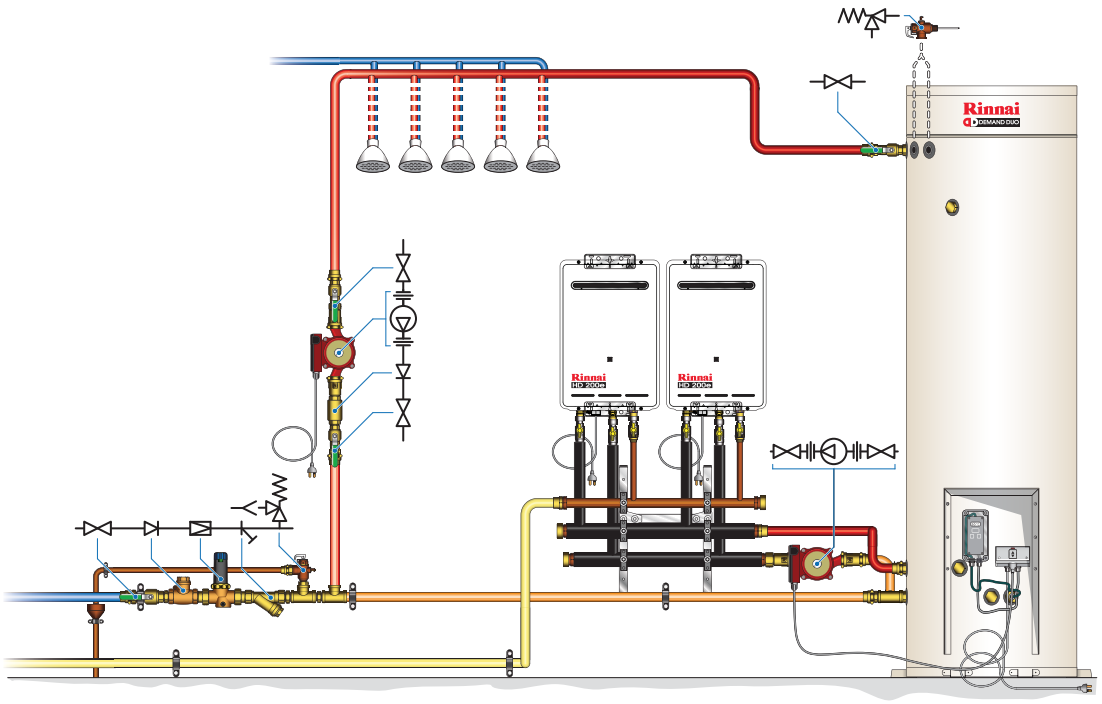
Matched storage capacity cover exceptional demands during the peak times.

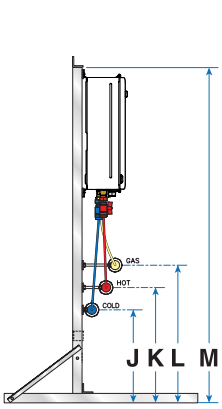
- Lower capital cost system with lower gas input
- Inbuilt redundancy through multiple heating units
- More cost effective and easier to maintain than cumbersome boiler systems, the Rinnai Demand Duo system is perfect for:
    - Hotels and motels
    - Apartment blocks
- Compatible with circulating ring mains
- Suitable for warm water circulation (<55°C) with UV sterilizers

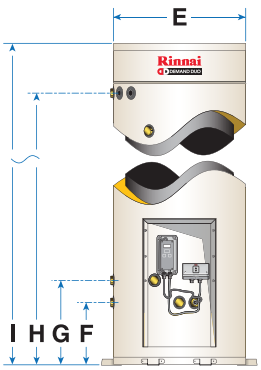
Cost Effective Installation

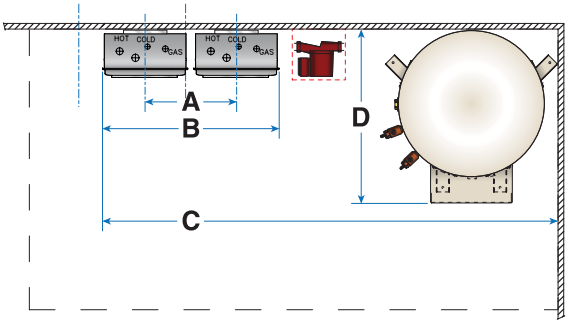
- Pre-constructed skids roll or lower into place
- Reduced installation times
- System warranty
- Connect multiple skids in parallel for larger systems
- Storage can be located remotely from water heating units











Model	A	B	C	D	E	PTR INCLUSIONS	Primary Pump	Mj Rating (HD200's)	Total System Weight (315L)
DD1	375	N/A	600	715	600	1 x HT575	UPS20-60B	200	92
DD2		725	1825			1 x HT575	UPS25-80B	400	115
DD3		1100	2200			1 x HT575	UPS25-80B	600	135
DD4		1475	2575			1 x HT575 & 1 x Boiler Valve	UPS25-80B	800	155
DD5		1850	2950				UPS25-80B x 2	1000	175
DD6		2225	3325				UPS25-80B x 2	1200	190

Tank Model	C	D	E	F	G	H
250 Litre	285	385	1475	1690	60 kg	310 kg
315 Litre			1855	2080	72 kg	385 kg

HD Model	J	K	L	M
HD200 e	410	510	610	1500
HD200 i	340	440	540	

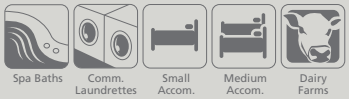
3

Rapid Recovery Storage

Applications requiring rapid delivery with recovery time available before next use.

For example, filling a machine or spa bath.

IDEAL FOR:



DEMAND RAPID Domestic

- Suited to large domestic houses with spa baths, low water pressure or limited gas supply
- 250 - 315 litre cylinders
- Pre-assembled
- Simple installation
- 32 mm inlet and outlet water connections
- External or internal models

DEMAND RAPID

- High output commercial hot water system
- Pre-assembled and shipped to site ready for installation
- For locations requiring high peak flow rates and/or high water temperature.
- 32 mm water connections
- External or internal models (with appropriate flueing)
- 315 litre stainless steel cylinder

Multiple DEMAND RAPID Systems

Rinnai DEMAND RAPID systems can be manifolded to provide a scaleable solution.

For applications where a large quantity of hot water is required quickly with rapid recovery.

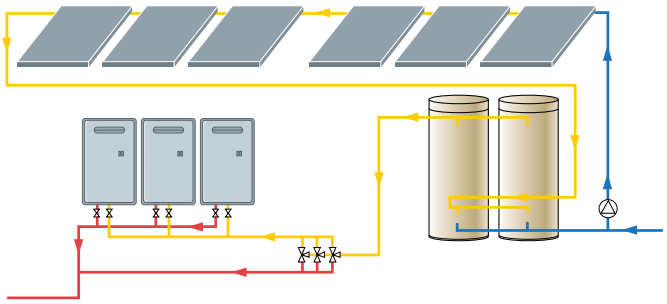
Models available for both indoor and outdoor installations.

S

Solar Preheat systems

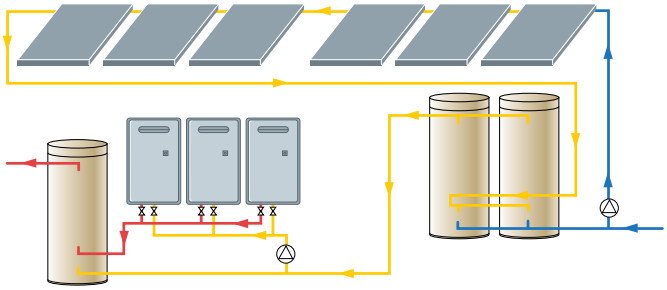
Combine our energy efficient commercial solutions with a Rinnai solar system or one from your preferred supplier.

Use free energy from the sun while ensuring your customers always have hot water when they need it.



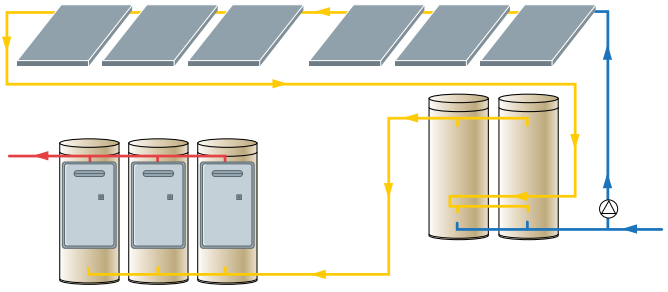
S1. DEMAND DIRECT

Solar preheat with
continuous flow hot water



S2. DEMAND DUO

Solar preheat with
continuous flow and storage backup



S3. DEMAND RAPID

Solar preheat with
high output stored hot water

Sun powered hot water solutions

Solar Preheat systems are installed in conjunction with Rinnai commercial water heating systems. Combine the energy from the sun with the high efficiency and reliablity of gas water heating — the best of both worlds!

The high power of a Rinnai commercial gas system means sizing of the solar collection system is not as critical, for example where space for solar panel installation is constrained.

In commercial situations you do not always have the ability to alter water use to match the availability of solar energy.

Commercial solar hot water installations therefore require a booster system to ensure hot water availability during peak demand periods, in winter, and when full solar contribution is not available.

Conventional low powered electric boost systems must be set to top-up the cylinder temperature well ahead of anticipated hot water use. If this water use does not eventuate, or solar energy becomes available, then the electric boost energy has been wasted.

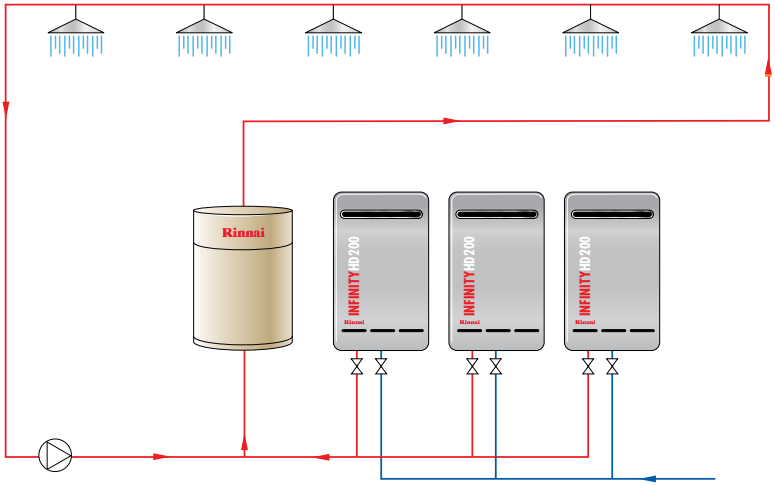
Gas boosted systems allow you to maximise solar gain and only add heat to the water if required at the time of use.

This minimises the boost energy required to heat the water, reducing the running costs while still ensuring the availability of hot water.

Ring Mains

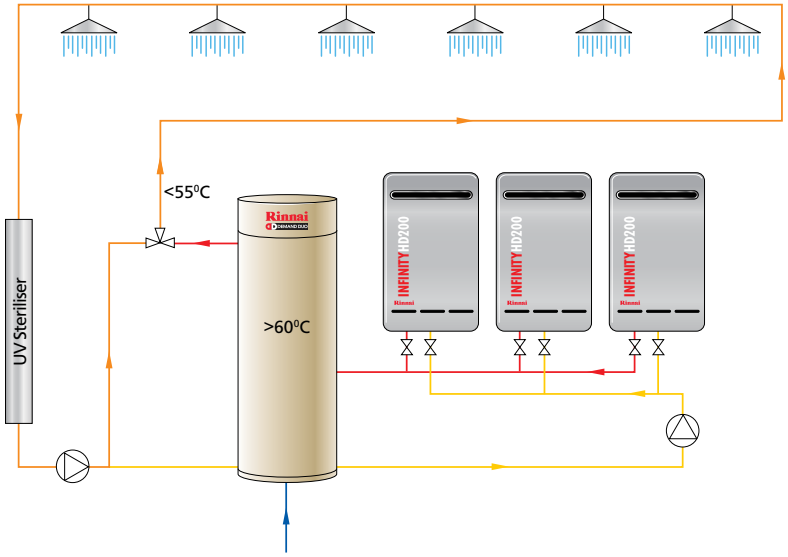
Circulating Ring Mains give your customers hot water instantly available at all outlets.

Hot water immediately when you turn on the tap



DEMAND DIRECT with High Temperature Ring Main

- DEMAND DIRECT systems are the perfect match with a circulating ring main system.
- Rinnai's recommended method for combining the benefits of Rinnai DEMAND DIRECT Systems with circulating ring mains to keep the ring main heated.



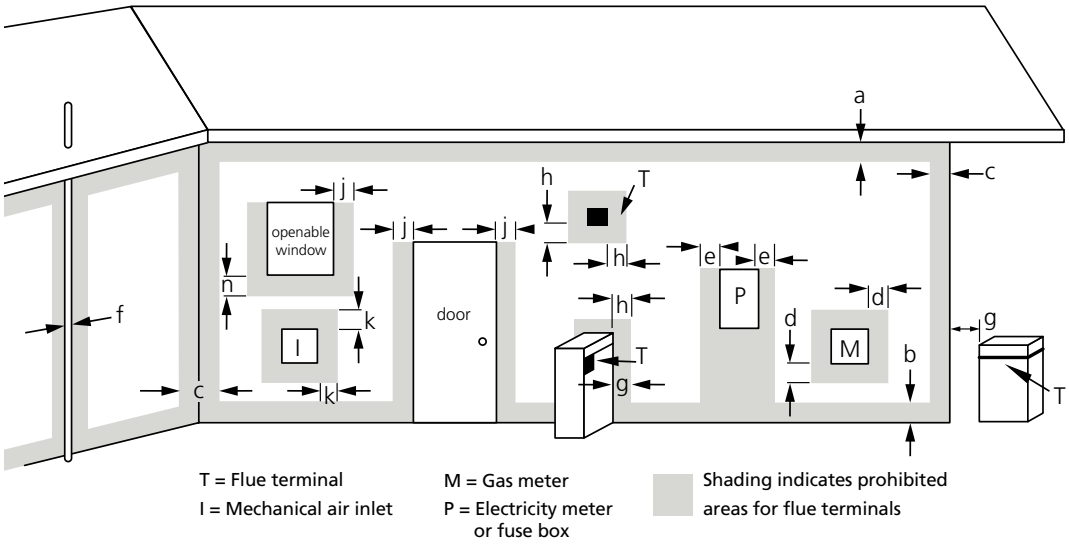
DEMAND DUO With Low Temperature Ring Main (DDWW)

Low temperature ring mains are becoming popular as an economic and reliable solution for larger installations.
Reduce installation and maintenance costs by eliminating tempering valves at each outlet.
Please contact the Rinnai specification service to see if your project would benefit from the use of a low temperature ring main.

Clearances Required for Flue Terminals

Note - Refer to the full requirements of NZ55261 Section 2.6.13

In order to provide safe and effective heating, it is important that you strictly adhere to all relevant gas installation standards. Prior to purchasing or siting an appliance, you need to check you have met the standard guidelines as detailed below.

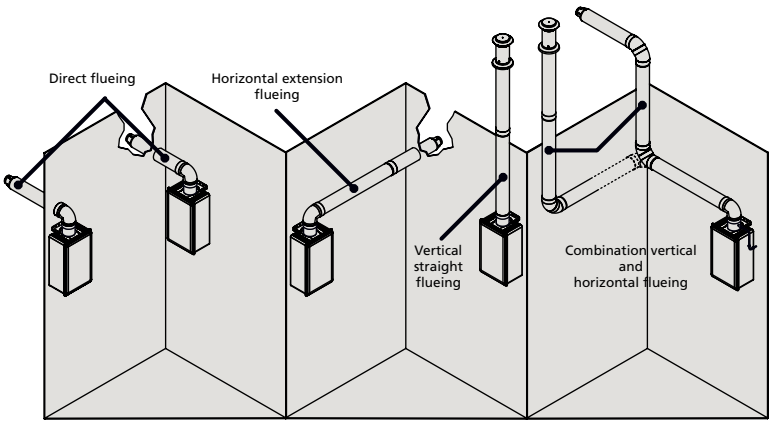


KEY		
T = Flue terminal	M = Gas meter	
I = Mechanical air inlet	P = Electricity meter or fuse box areas for flue terminals	
Shading in the diagram above indicates prohibited areas for flue terminals		
Ref:	Item	Minimum clearances (mm)
	Fan assisted	
a	Below eaves, balconies and other projections: • Gas appliances over 50 MJ/h input	 300
b	From the ground, above a balcony or other surface	300
c	From a return wall or external corner	300
d	From a gas meter (M))see 2.5.4.9 for vent terminal location of regulator)	1000
e	From an electricity meter or fuse box (p)	500
f	From a drain pipe or soil pipe	75
g	Horizontally from any building structure or obstruction facing a terminal	500
h	From any other flue terminal, cowl, or combustion are intake (see note 6)	300
j	Horizontally from an openable window, door, non mechanical air inlet, or any other opening into a building with the exception of sub-floor ventilation: Gas appliances over 200 MJ/h input All fan assisted flue gas appliances, in the direction of the discharge	 500 1500
k	From mechanical air inlet, including a spa blower	1000
n	Vertically below an openable window, non-mechanical air inlet, or any other opening into a building with the exception of sub-floor ventilation: • Gas appliances over 150 MJ/h input	 1500

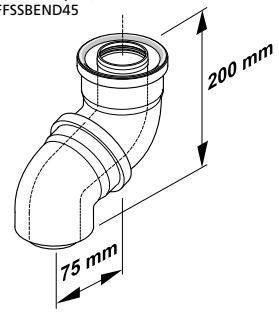
Rinnai Continuous Flow Internal Flueing

We've taken the complexity out of internal flueing by offering one type of flueing system across all models of internal units.

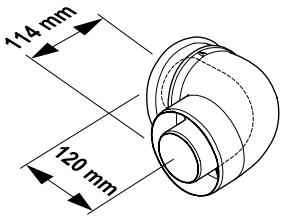
Internal flueing options available



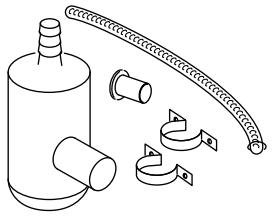
45° Bend (pair)
FFSSBEND45



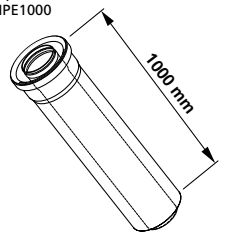
90° Bend
FFSSBEND90



Condensate Trap Kit
FFSSCOND



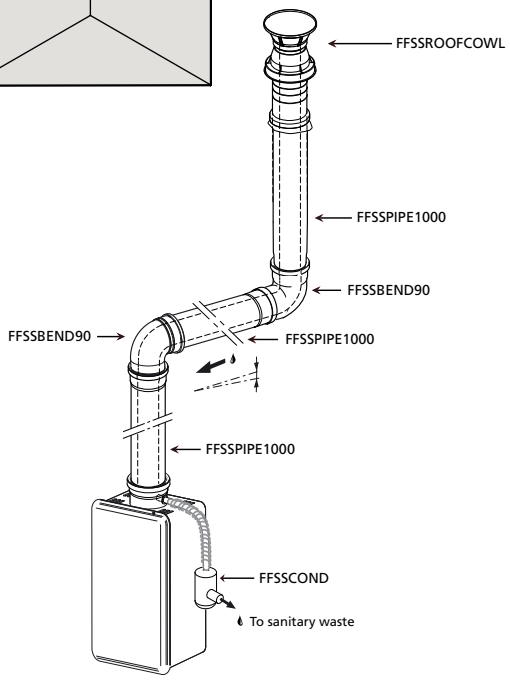
Flue Pipe
FFSSPIPE1000



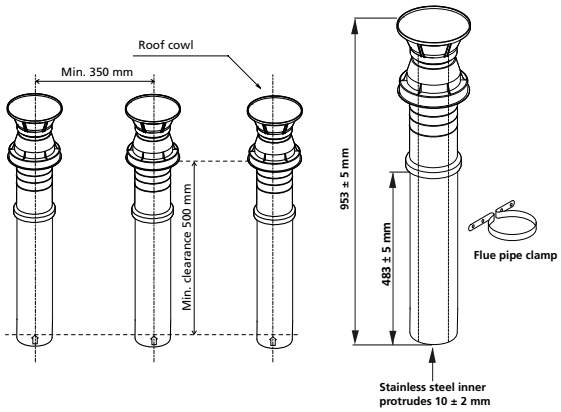
Maximum flue length and number of bends

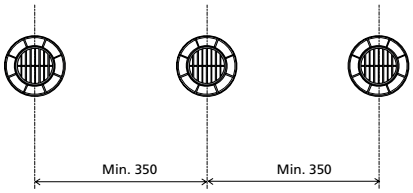
Flue Length (m)	Number of 90 Degree Bends				
	0	1	2	3	4
1					
2	Short flue setting				
3					
4					
5					
6					
7	Long flue setting				
9					
11					
13					
15					

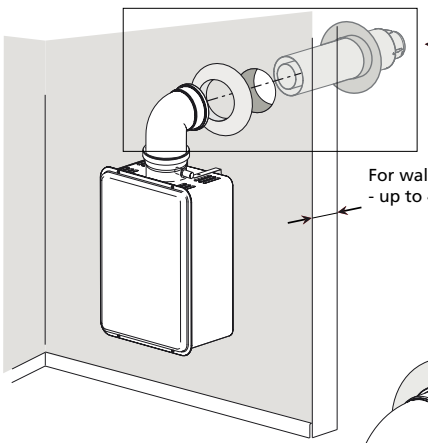
Maximum flue length

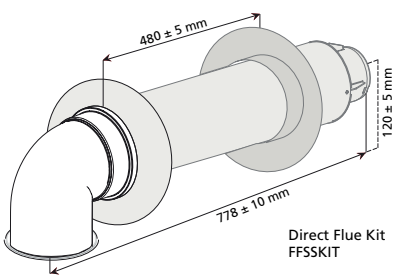


Flueing for multiple terminal installations









Direct Flue Kit
FFSSKIT

RINNAI DEMAND DUO WARM WATER VALVE

As an addition to the Demand Duo range, Rinnai is pleased to release our new Commercial Warm Water Valve.

The Rinnai Demand Duo Warm Water Valve (DDWWV) is a circulating warm water valve designed to accept 60oC or more incoming hot water from a storage hot water system and deliver a reduced constant outlet temperature across a full range of flow rates with minimal pressure drop.

Save on Installation & Maintenance Costs

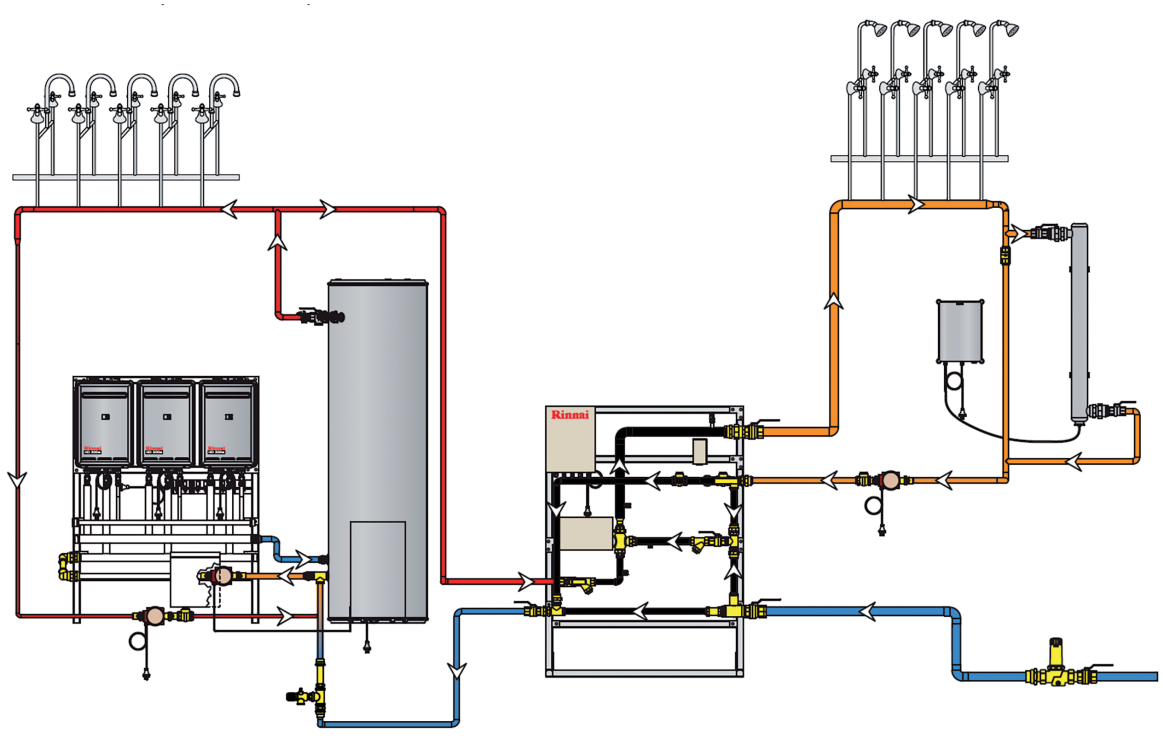
The DDWWV is suitable for commercial applications such as apartments, hotels, hospitals and nursing homes where multiple tem- pering or thermostatic mixing valves can now be replaced with a centralised valve.
The installation of a centralised DDWWV has many benefits:

- Reduces the installation cost of multiple valves
- Reduces the cost and inconvenience of having to service multiple units
- Maintenance can be fully managed at the hot water plant room
- Improved maintenance scheduling with reduced interruption
- Improves the aesthetics

Hot Water Temperature Overview

The delivery temperature of hot water to ablution areas is normally 42oC or 50oC to reduce the risk of scalding (AS3500 part 4). Storage water on the other hand, must be kept at a minimum of 60oC (AS 3498). While the two seem incompatible, there are several ways to satisfy both requirements.

- Store the water at 60oC and circulate throughout a building and passing through multiple tempering valves or thermostatic mixing valves (i.e. at each dead leg branch)
- Heat the water to the required outlet temperature with a heat exchange system and circulate it throughout a building and now...
- Store the water at 60oC - 65oC and pass it through a central Rinnai DDWWV and circulate it throughout the building at the required outlet temperature



Demand Duo (Including a Hot Water Ring Main) **Warm Water Valve** **Warm Water Ringmain**

Rinnai | BENEFITS

Safe Operation

In operation, the DDWWV has an electronic controller that constantly measures the warm water outlet temperature. The system automatically adjusts a magnetically actuated three way mixing valve, positioning the actuator to mix hot and cold water at a precise rate to achieve the programmed outlet temperature.

The outlet temperature is also adjustable to compensate for temperature losses along the ringmain, ensuring correct water temperature is delivered at the point of use. It should be noted that a correct ringmain design with appropriate insulation is required to minimise temperature losses around building.

Easy Installation

The valve, controller and temperature sensors, as well as all plumbing, are supplied as a complete assembly on a freestanding or wall mounted frame. In addition, the controller is pre-set to the nominated temperature to allow fast installation on site.

The installer simply needs to plumb to the connection points: cold water inlet, warm water outlet, ringmain return, feed to hot water storage and the hot return from the stored water, as well as any necessary isolation valves and UV or other disinfection system. One GPO is required. Commissioning may be required for projects where DDWWV is used to replace TMV's.

Retrofit

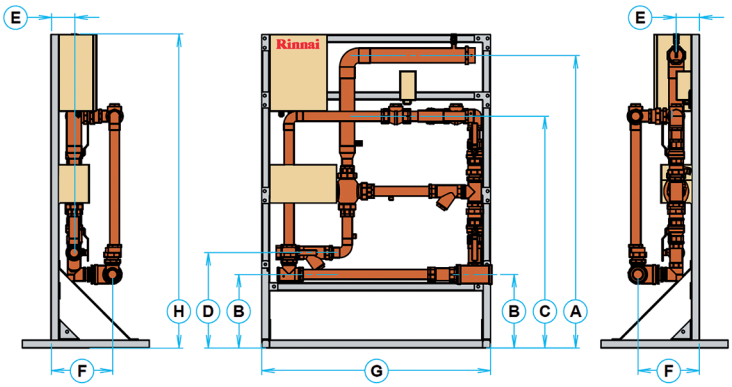
The Rinnai DDWWV is also suitable to retrofit to existing (non-Rinnai) storage hot water systems. Simply connect the cold feed and hot return to the storage hot water system, cold water and warm water flow and return to the valve assembly. There must be a ringmain with a suitable pump fitted to allow the valve to function as designed. See minimum flow rate on table overleaf.

Solar Pre-Heating

As part of the Rinnai Demand Duo range, the DDWWV is also compatible with Solar Boosting. Contact Rinnai Commercial for details.

Fully Approved

The DDWWV is approved to AS4032.1 as a Thermostatic Mixing Valve and to AS4032.2 as a Tempering Valve. It is also approved as a Warm Water System by NSW Health.



Connection Points		A		B		C		D		E	F	G	H
		Warm Water Outlet	Pipe Diameter	Cold Inlet	Pipe Diameter	Warm Water Return	Pipe Diameter	Hot Inlet	Pipe Diameter	Warm Water Outlet	Cold Inlet	Width	Height
Systems	DDWW32	1486	32	462	32	1182	20	546	20	147	291	1200	1640
	DDWW50	1485	50	395	50	1187	32	576	32	147	238	1200	1640
	DDWW80	1533	80	385	80	1215	50	499	50	100	323	1200	1640




Rinnai
EXPERIENCE OUR INNOVATION

RINNAI HOLDINGS (PACIFIC) PTE LTD
61 Ubi Road 1 #02-20 & 21, Oxley Bizhub Singapore 408727
Tel: 6748-9011 Fax: 6745-9240
Website: www.rinnai.sg
Facebook: www.facebook.com/rinnaiholdingspacific